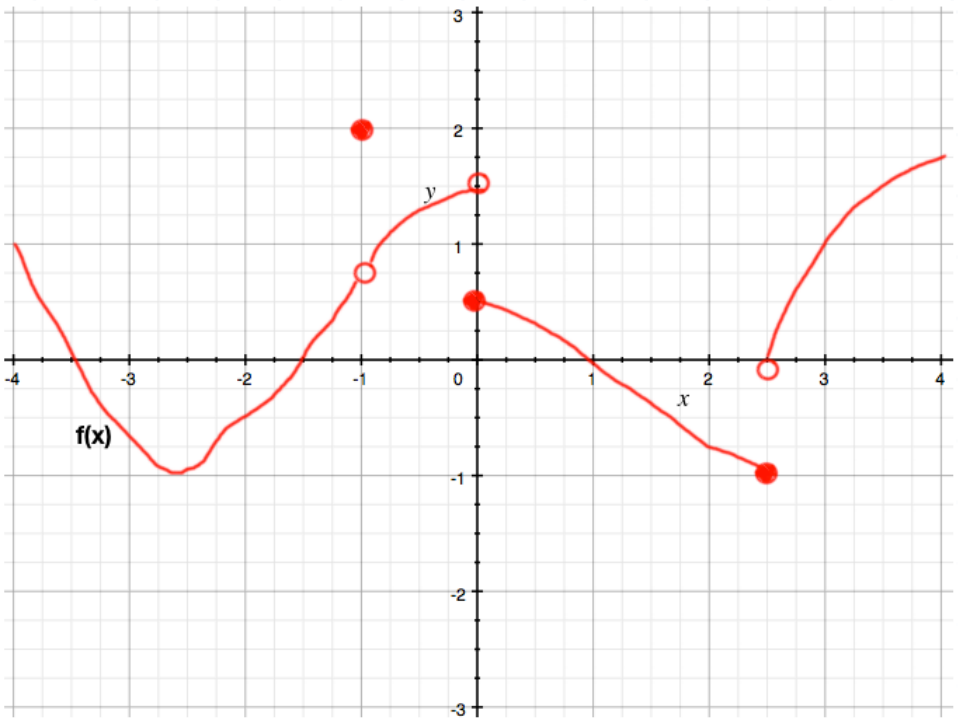
Topic: Crazy graphs

Question: Find the value of the limit.

$$\lim_{x\to -1^+} f(x)$$



Answer choices:

A $\lim_{x\to -1^+} f(x) = 0$

B $\lim_{x\to -1^+} f(x) = 2$

C $\lim_{x\to -1^+} f(x) = \frac{3}{4}$

D $\lim_{x\to -1^+} f(x) = \frac{1}{2}$

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Solution: C

In a discontinuous function, it's possible that the one-sided limits at a particular point will have different values.

Using the graph, we'll look at the limit as x approaches -1 from the right side. We can see that

$$\lim_{x \to -1^+} f(x) = \frac{3}{4}$$

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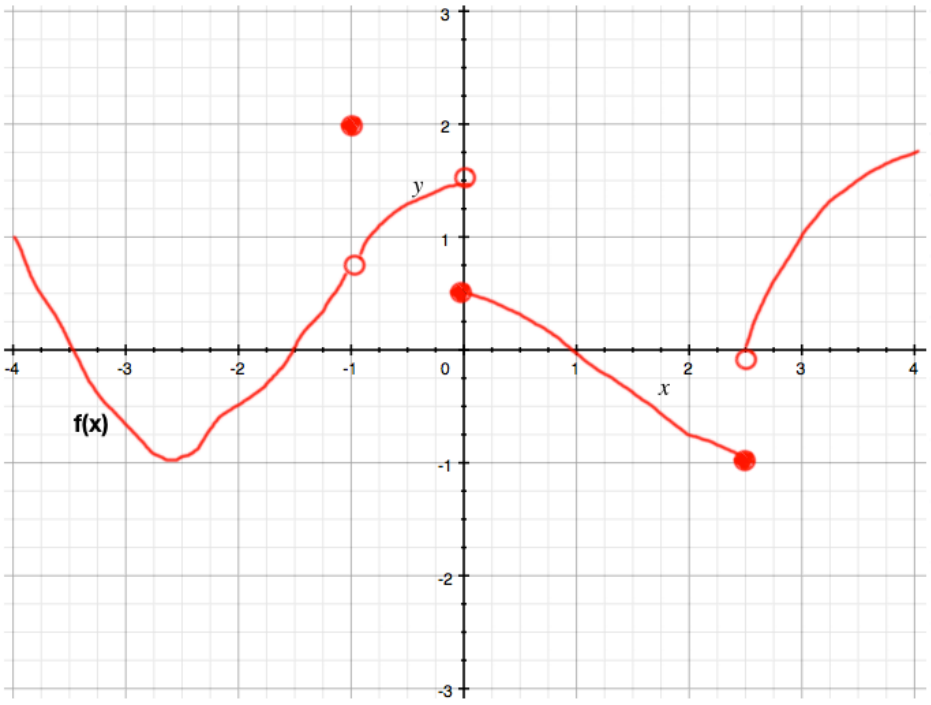
Topic: Crazy graphs

Question: Find the value of each limit.

$\lim_{x\to 0^-} f(x)$ $\lim_{x\to 0^+} f(x)$



Answer choices:

A $\lim_{x\to 0^-} f(x) = -\frac{1}{2}$ $\lim_{x\to 0^+} f(x) = -\frac{3}{2}$

B $\lim_{x\to 0^-} f(x) = -\frac{3}{2}$ $\lim_{x\to 0^+} f(x) = -\frac{1}{2}$

C $\lim_{x\to 0^-} f(x) = \frac{1}{2}$ $\lim_{x\to 0^+} f(x) = \frac{3}{2}$

D $\lim_{x\to 0^-} f(x) = \frac{3}{2}$ $\lim_{x\to 0^+} f(x) = \frac{1}{2}$

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Solution: D

In a discontinuous function, it's possible that the one-sided limits at a particular point will have different values.

Using the graph, we'll look at the limit as x approaches 0 from either side. We can see that

$$\lim_{x \to 0^-} f(x) = \frac{3}{2}$$

and

$$\lim_{x \to 0^+} f(x) = \frac{1}{2}$$

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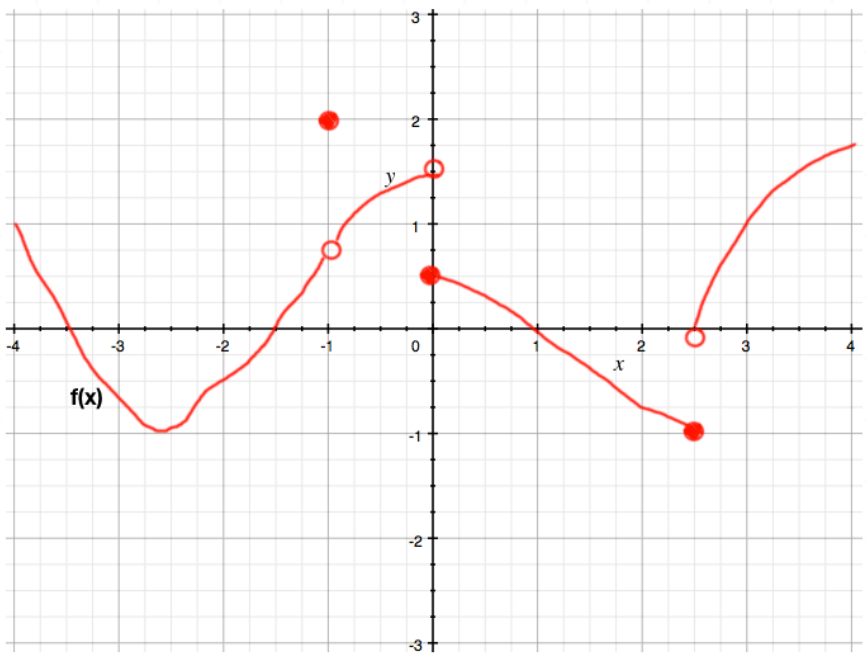
Topic: Crazy graphs

Question: Find the value of each limit.

$\lim_{x\to\frac{5}{2}^+} f(x)$ $\lim_{x\to\frac{5}{2}^-} f(x)$



Answer choices:

A $\lim_{x\to\frac{5}{2}^+} f(x) = 0$ $\lim_{x\to\frac{5}{2}^-} f(x) = -1$

B $\lim_{x\to\frac{5}{2}^+} f(x) = -1$ $\lim_{x\to\frac{5}{2}^-} f(x) = 0$

C $\lim_{x\to\frac{5}{2}^+} f(x) = 0$ $\lim_{x\to\frac{5}{2}^-} f(x) = 1$

D $\lim_{x\to\frac{5}{2}^+} f(x) = 1$ $\lim_{x\to\frac{5}{2}^-} f(x) = 0$

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Solution: A

In a discontinuous function, it's possible that the one-sided limits at a particular point will have different values.

Using the graph, we'll look at the limit as x approaches $5/2$ from either side. We can see that

$$\lim_{x \to \frac{5}{2}^+} f(x) = 0$$

and

$$\lim_{x \to \frac{5}{2}^-} f(x) = -1$$

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